



PETROLEUM WATCH

California Energy Commission

May 2015

Recent Petroleum News and Outside Analyses

Refining News

- **Tesoro Golden Eagle Martinez Refinery:** Restart began on Friday, March 27. This process should be completed shortly.
- **Chevron Richmond Refinery:** Plans for a \$1 billion modernization project were approved by both the city and the county court. The Richmond refinery processes 245,000 barrels of crude oil a day.
- **ExxonMobil Torrance Refinery:** Production continues at reduced rates as the facility recovers from the February 18 explosion and the March 11 fire.

State and Federal Policy News

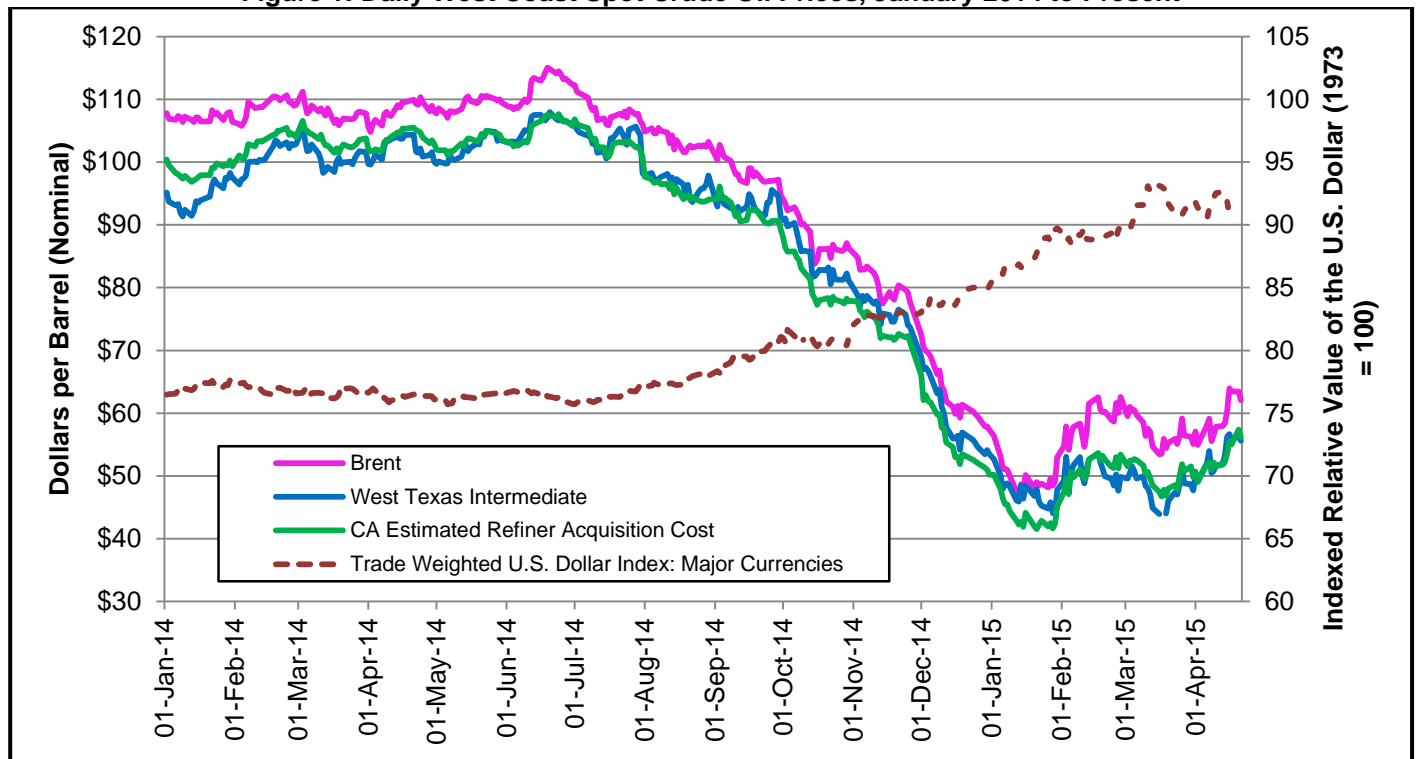
No news to report.

Outside Analysis

Nothing to report.

Crude Oil Prices

Figure 1: Daily West Coast Spot Crude Oil Prices, January 2014 to Present



Source: Energy Information Administration, Oil Price Information Service, and Federal Reserve Bank of St. Louis

Crude oil prices increased in April, with the California Estimated Refiner Acquisition Cost¹ (CA-RAC) of crude oil estimated at \$56.19 a barrel on April 21, 2015 (see Figure 1), an increase of 18 percent over the March average. The April increase in prices reversed the small decline in prices that started in mid-February. These are the highest crude oil prices seen in 2015, although they remain substantially lower than a year ago.

This upward reversal in crude oil prices has been accompanied by a pause in the relative strength of the U.S. dollar on the international exchange markets (dotted line in Figure 1). Using the FRED² index of the U.S. dollar against the major currencies, the average purchasing power of the dollar is unchanged from the March average. This puts at least a temporary halt to the increase in purchasing power that began last summer. From the January lows, the dollar has increased 6 percent, while the price of oil is up 35 percent.

Crude Oil Prices

April 2014 vs 2015 (Percent Change)

WTI	48% lower
Brent	45% lower
CA-RAC	49% lower

March 2015 Averages

WTI	\$48.21
Brent	\$56.94
CA-RAC	\$50.00

April 21, 2015

WTI	\$55.58
Brent	\$62.08
CA-RAC	\$56.19

¹ California Estimated Refiner Acquisition Cost was created as an estimate of the average price of crude oil paid by California refineries. It is created using California refinery input proportions of California crude, Alaskan crude, and foreign crude and multiplying them by the prices of San Joaquin Valley, Alaskan North Slope, and Brent crude oil respectively.

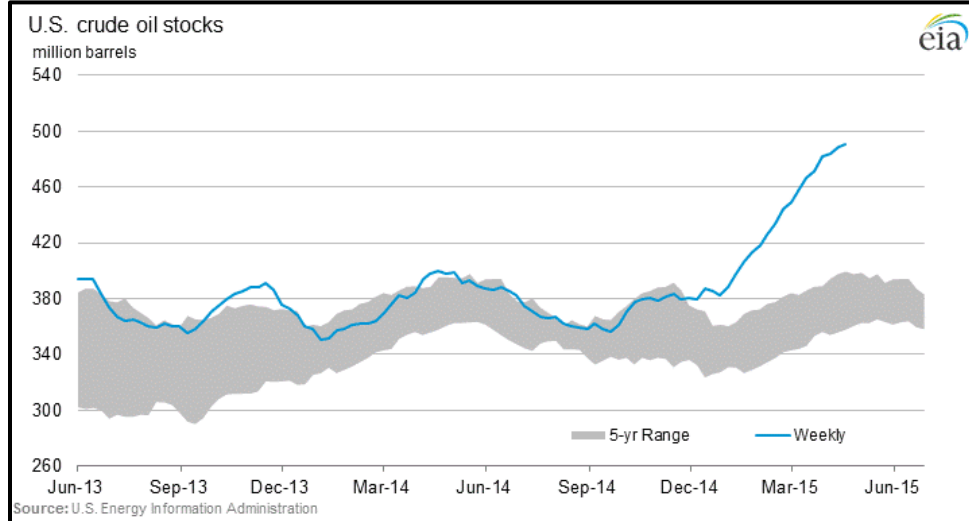
² Federal Reserve Economic Data, provided by St. Louis Federal Reserve Bank.

Crude Oil Production and Storage

While petroleum prices have been increasing in 2015, there have been several news reports regarding a slowdown in United States oil production, of shale oil in particular.³ Nevertheless, closer inspection reveals that according to some measures, the quantity of crude oil available globally has increased.

- U.S. crude oil output continues to increase according to the U.S. Energy Information Administration (EIA): U.S. production of crude oil has risen 2.8 percent during the first four months of 2015 to 9.4 million barrels per day. Remarkably, in 2014, this increase was also 2.8 percent.
- Imports of Canadian crude oil are up sharply in 2015, according to EIA data. Imports from Canada increased 16.2 percent during the first four months of 2015 to 3.2 million barrels per day. But in 2014, the corresponding data showed an increase of only 4.0 percent.
- The amount of crude oil stored in the United States has increased by 27 percent during 2015 to 490 million barrels. (See Figure 2.) The magnitude of this increase is best shown in the following graph from EIA.

Figure 2: U.S. Crude Oil Inventories, June 2013 to Present



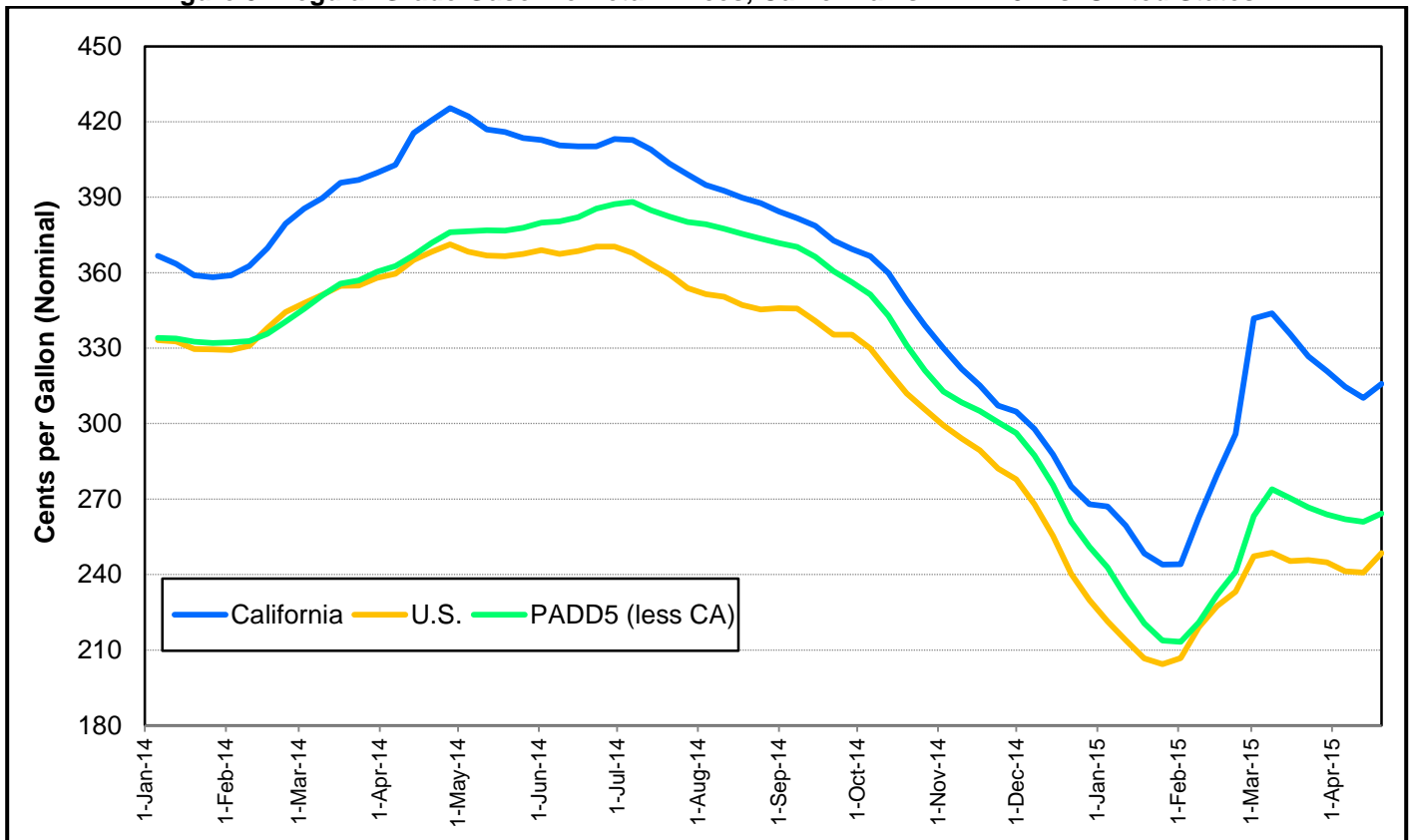
- Saudi Arabian output increased rapidly from February to March of this year, with the Organization of the Petroleum Exporting Countries (OPEC) reporting an increase of 3.5 percent during this month, from 9.6 million barrels per day to 10.0 million barrels per day. Other OPEC data put this increase at 6.3 percent for the month.

As the quantity of crude oil supply increases, one would ordinarily expect the price to decline, but this is not what was observed in 2015. Prices remain quite a bit lower than they were in June 2014, when the prices of Brent crude and West Texas Intermediate were \$115 and \$108 per barrel, respectively, but since the lows of January and March 2015, prices have risen 27 to 33 percent. This contradiction of rising trends in both price and quantity supplied will somehow be resolved in coming months, either through a decline in price, a decline in the quantity of oil supplied to the markets, or some combination of both.

³ For instance see the April 16 *New York Times*: "Signs of Slowdown in Oil Production Send the Price Up, for Now." @ http://www.nytimes.com/2015/04/16/business/energy-environment/price-of-oil-rises-but-future-direction-remains-question-mark.html?_r=0.

Gasoline and Diesel Retail Prices and Margins

Figure 3: Regular Grade Gasoline Retail Prices, California vs. PADD5⁴ vs. United States



Source: Energy Information Administration.

California gasoline prices fell during most of March and into early April before making a small increase in the third week of April. Although crude oil prices have made new highs for 2015, it remains to be seen if gasoline prices will follow suit.

California gasoline prices remain higher than usual when compared with U.S. gasoline prices, with the difference sitting at 67 cents in the third week of April. The difference is much higher than the 2014 average difference of 39 cents, although it has declined substantially from the peak of 95 cents in early March. This decline is likely due at least in part to the refinery outages and restart mentioned on page 1. The differential widened when the two refineries were out and began to narrow when the restart of one became apparent.

Regular Gasoline Prices

April 2014 vs 2015 (Percent Change)

California	25% lower
U.S.	33% lower
West Coast	29% lower

March 2015 Averages

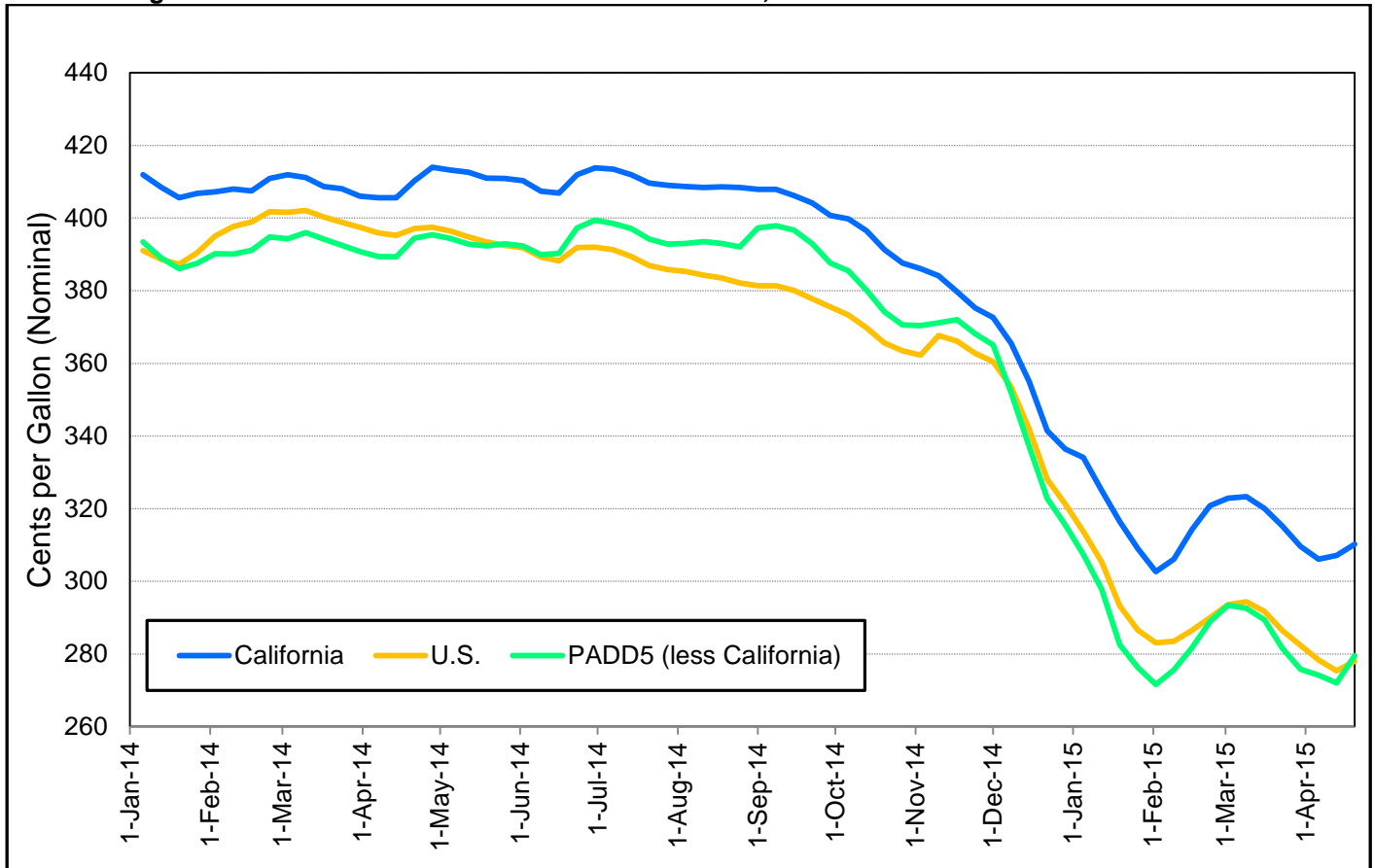
California	\$3.34
U.S.	\$2.46
West Coast	\$2.68

Week of April 20, 2015

California	\$3.16
U.S.	\$2.49
West Coast	\$2.64

⁴ PADD stands for *Petroleum Administration for Defense Districts*. PADD 5 includes the states of Hawaii, Alaska, Washington, Oregon, California, Nevada, and Arizona. West Coast is being defined as all PADD 5 states less California for this report.

Figure 4: No. 2 Diesel Ultra-Low-Sulfur Retail Prices, California vs. PADD5 vs. United States



Source: Energy Information Administration.

The price of California diesel has not rebounded from the 2015 low to the same extent as the price of gasoline has. After increasing during the second and third weeks of April, the price reached \$3.08. Nevertheless, it remains near the 2015 low of \$3.03.

Like California gasoline prices, California diesel prices remain higher than usual when compared with U.S. gasoline prices, with the difference sitting at 32 cents in the third week of April, which is a high for 2015, although the differential has stayed between 28 and 32 cents since mid-February. This differential is much higher than the 2014 average difference of 18 cents. The California refinery outages seem to have had less effect on diesel prices than on gasoline prices.

Diesel Prices

April 2014 vs 2015 (Percent Change)

California	25% lower
U.S.	30% lower
West Coast	30% lower

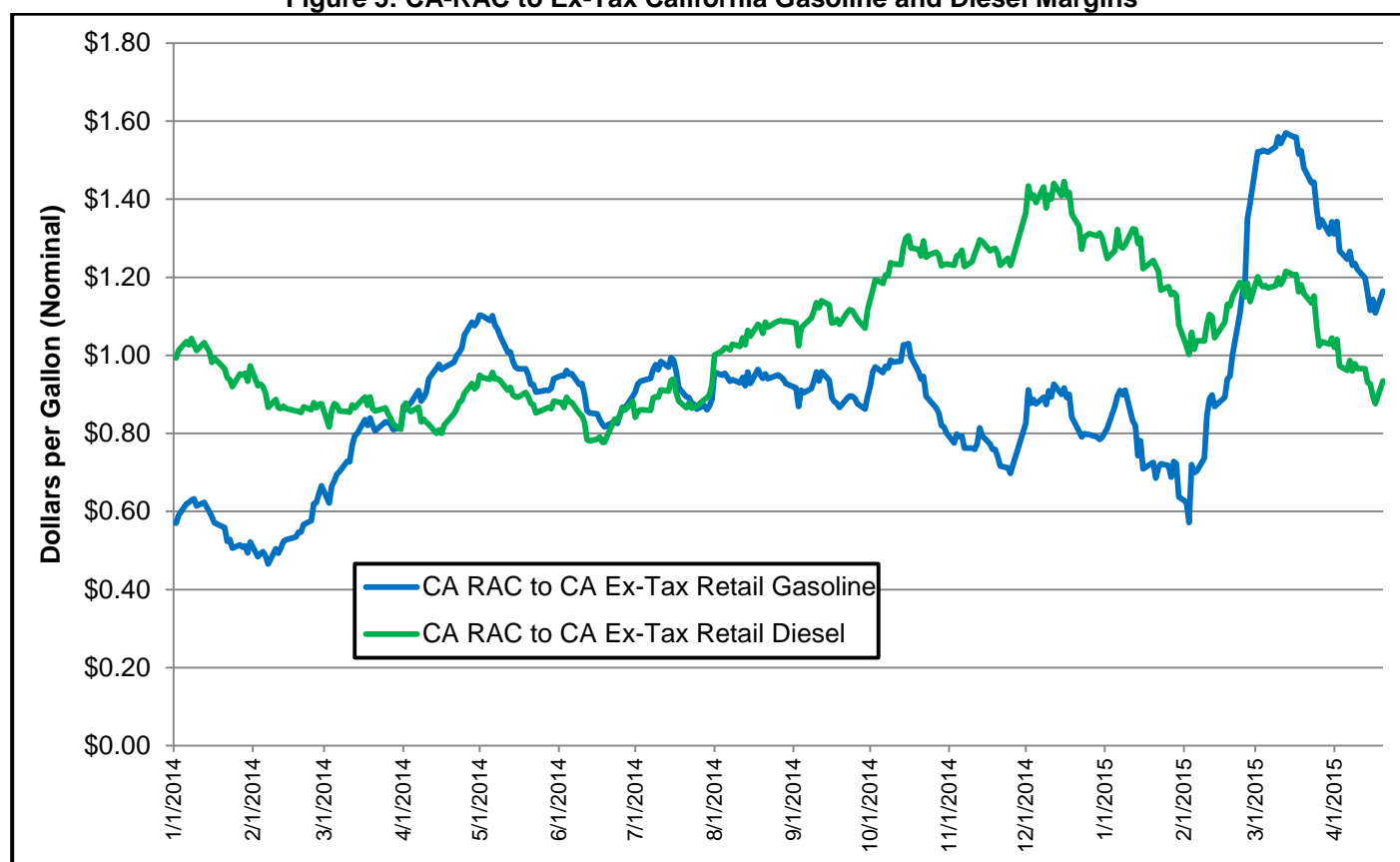
March 2015 Averages

California	\$3.18
U.S.	\$2.90
West Coast	\$2.87

Week of April 20, 2015

California	\$3.08
U.S.	\$2.77
West Coast	\$2.75

Figure 5: CA-RAC to Ex-Tax California Gasoline and Diesel Margins



Source: Energy Information Administration and Oil Price Information Service.

The average April 20 California RAC-to-ex-tax retail margin⁵ was \$1.16 for regular gasoline and 94 cents for diesel. (See Figure 4.) These are drops of 32 cents and 21 cents, respectively, from the March averages but are still above year-ago margins of 26 percent for gasoline and 12 percent for diesel.

Although production at the ExxonMobil refinery in Torrance remains low due to the February explosion, the Tesoro refinery in Martinez began to restart production at the end of March. Margins may have fallen since mid-March in expectation of the restart. In any case, gasoline margins have fallen sharply from the 2014-2015 highs, and diesel margins have resumed the downward trend that began in mid-December.

Crude to Retail Margins

April 2014 vs 2015 (Percent Change)

Gasoline	26% higher
Diesel	12% higher

March 2015 Averages

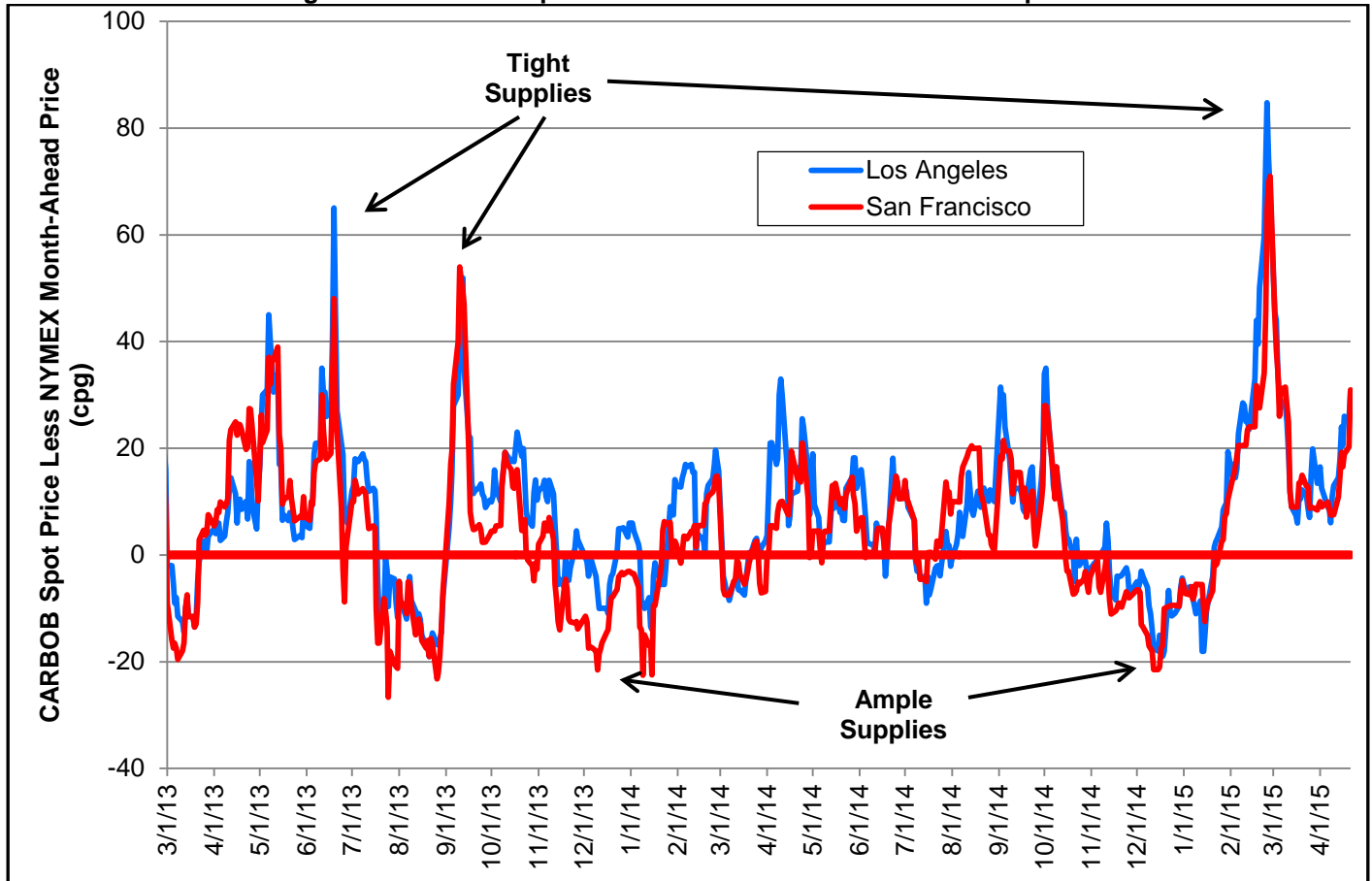
Gasoline	\$1.48
Diesel	\$1.15

April 20, 2015

Gasoline	\$1.16
Diesel	\$0.94

⁵ The RAC-to-retail margin refers to the difference between the retail price and the refiners acquisition cost for crude oil. Thus, it includes all costs of producing gasoline or diesel. "Ex-tax" refers to the removal of all California taxes on the price of fuel, which is done to remove any distortions from taxes that may affect this calculation.

Figure 6: California Spot Gasoline to NYMEX Futures Price Spread



Source: Energy Information Administration and Oil Price Information Service.

The spot-futures spread⁶ peaked on February 18, the date of the Torrance refinery explosion, due to the unexpected decrease in gasoline production. (See Figure 6.) The gasoline spread then declined to less than 10 cents before rebounding above 25 cents, producing an average monthly spread, through April 20, of about 15 cents. This spread indicates that the temporary tightness in the market has been resolved, and spreads have moved to fairly typical levels for the year as the market tightness was alleviated.

Gasoline Spot-Futures Spread

April 2014 vs 2015 (cents)

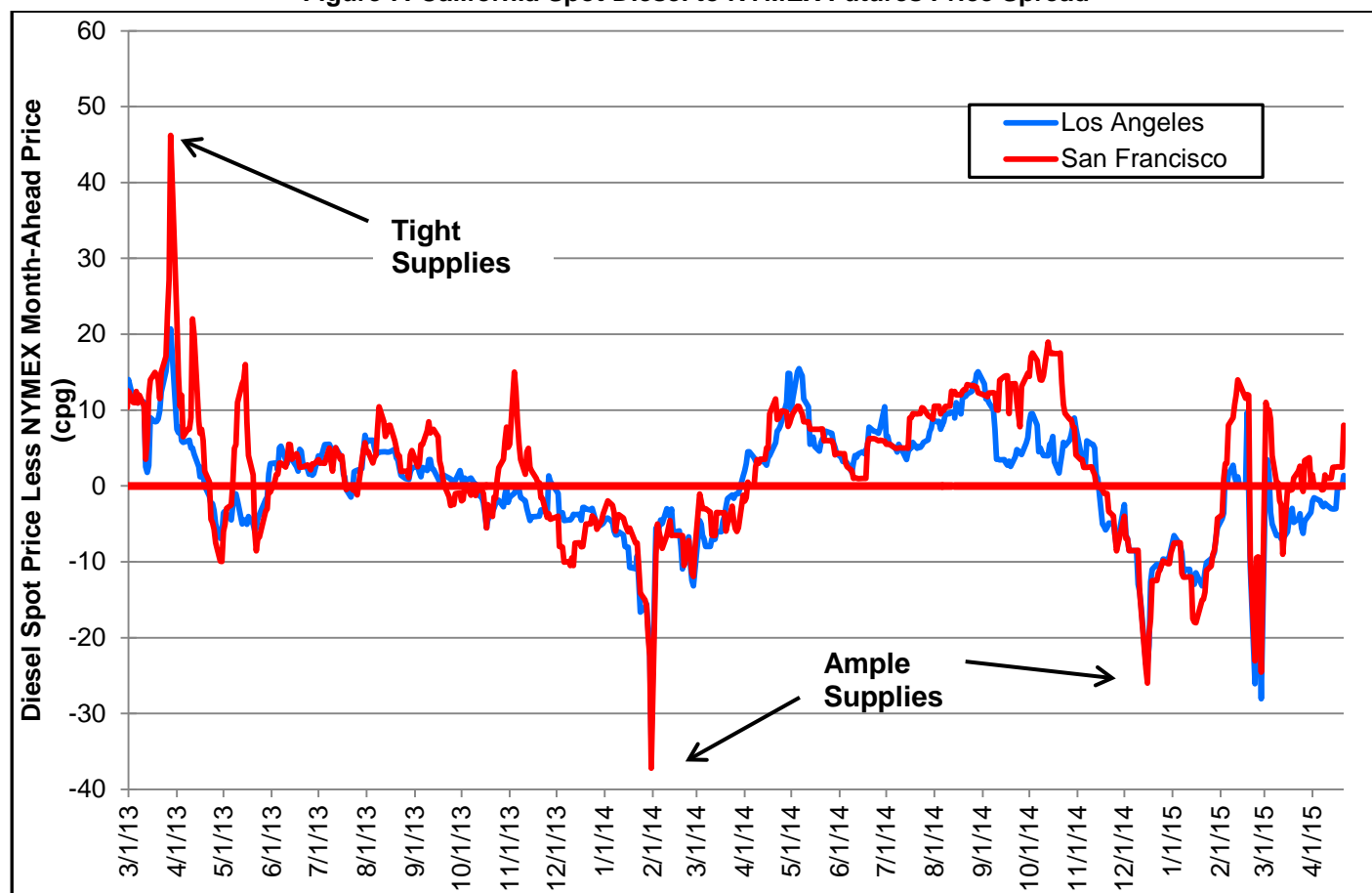
Los Angeles	Unchanged
San Fran.	5¢ higher

April 2015 Averages

Los Angeles	17¢
San Francisco	14¢

⁶ A higher spread between the state's spot fuel prices and the New York Mercantile Exchange (NYMEX) futures price indicates supplies are tighter in California, and a lower or negative spread indicates the market is relatively well-supplied compared to the rest of the country. The NYMEX futures price reflects the national market, while California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) is a gasoline blend unique to California and is usually sold at a premium to the NYMEX.

Figure 7: California Spot Diesel to NYMEX Futures Price Spread



Source: Energy Information Administration and Oil Price Information Service.

In spite of the outage at ExxonMobil's Torrance refinery and in stark contrast to the gasoline market, the diesel market has not been tight this year. Instead, the diesel market appears to have been somewhat oversupplied, as indicated by the negative price spread seen throughout most of the year to date. (See Figure 7.) The refinery outage put a swift end to the downward spike of late February, but the spread has remained fairly moderate since then, with monthly averages through April 20 hovering near zero.

Diesel Spot-Futures Spread

April 2014 vs 2015 (cents)

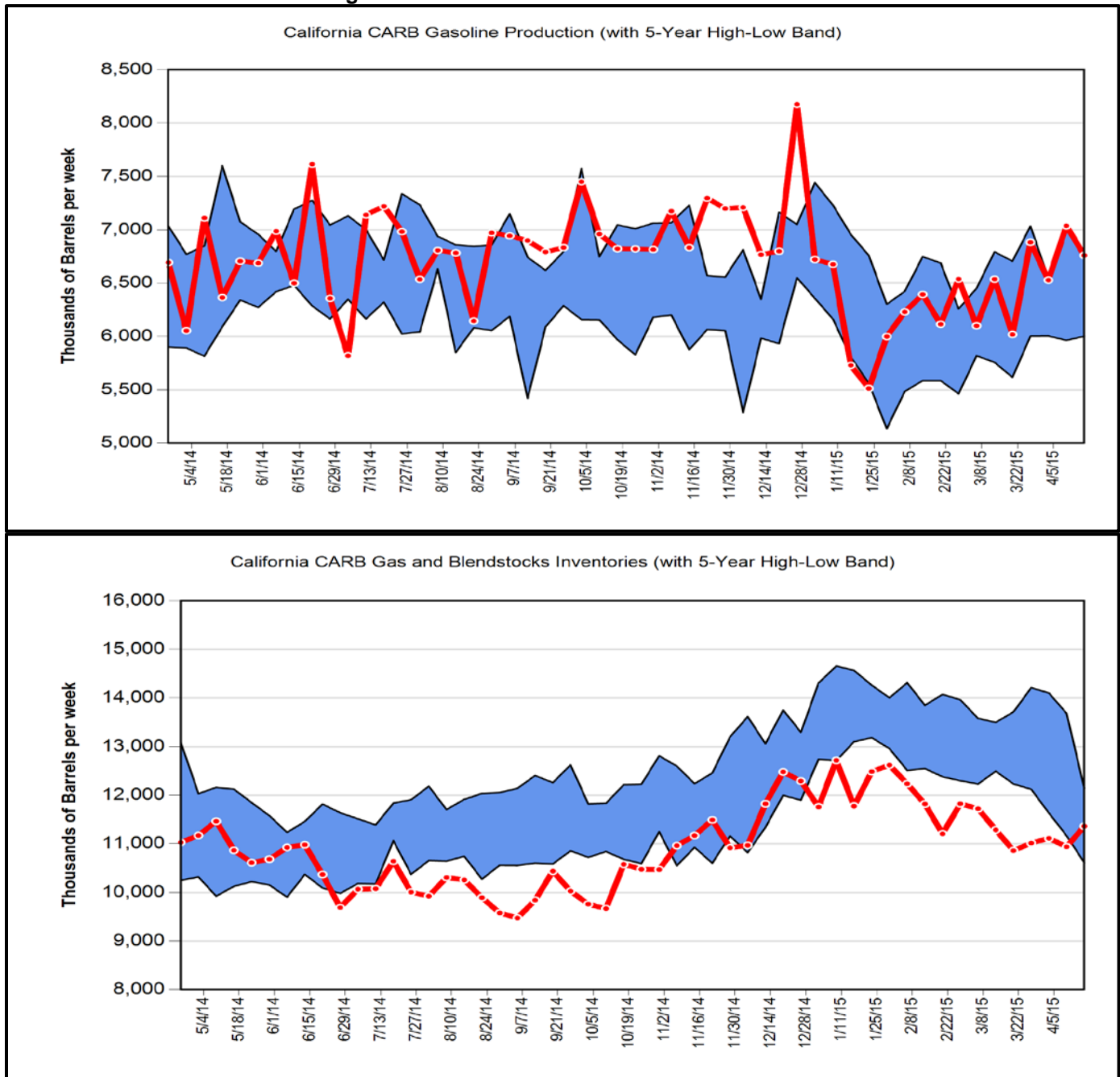
Los Angeles	8¢ lower
San Fran.	3¢ lower

April 2015 Averages

Los Angeles	-2¢
San Francisco	2¢

California Gasoline and Diesel Production and Inventories

Figure 7: Gasoline Production and Inventories

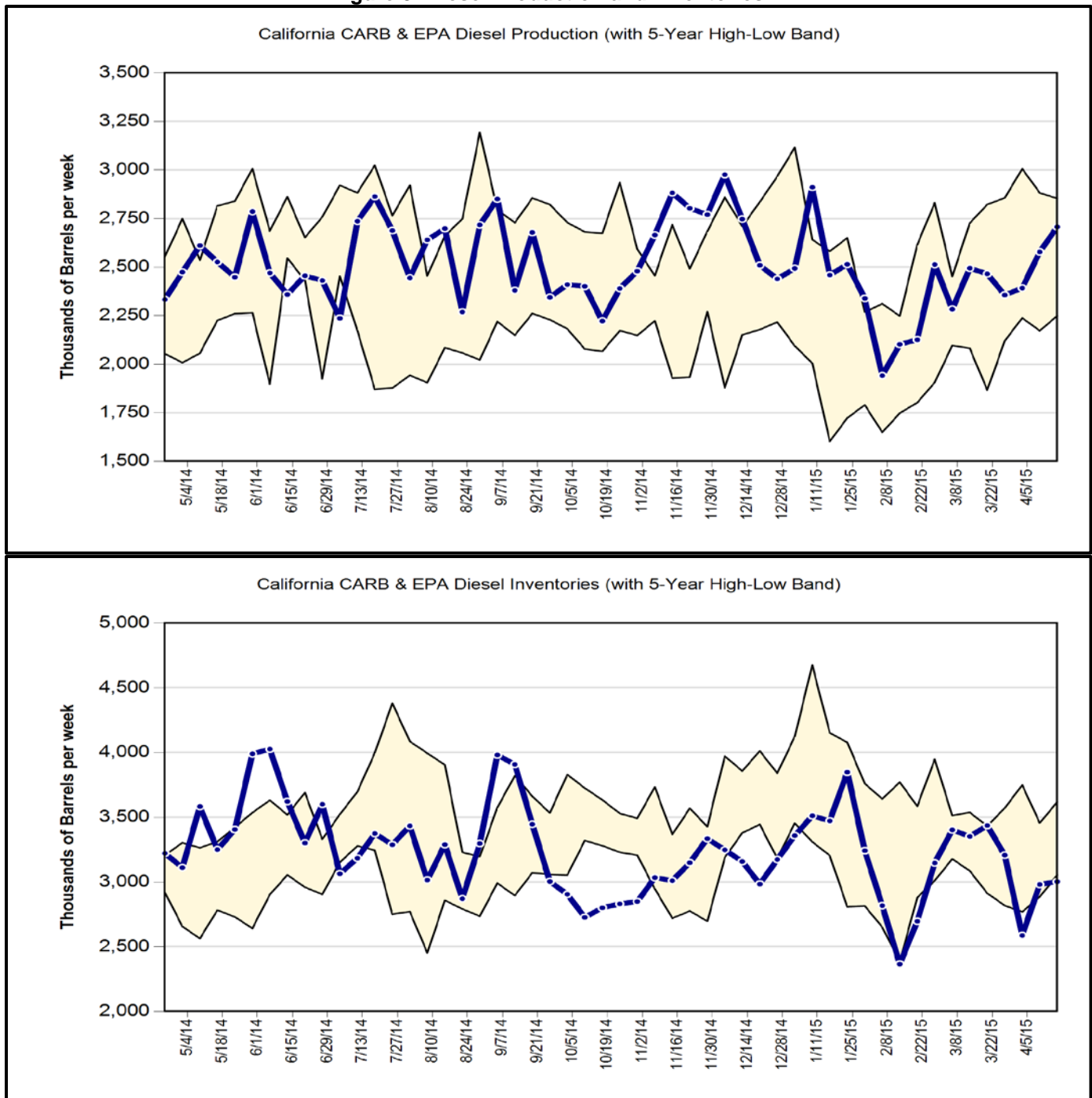


Source: Petroleum Industry Information Reporting Act data.

During late March and early April, inventories of California gasoline and blendstocks stayed close to 11 million barrels until the week of April 17, when they rose to 11.4 million barrels and into the five-year high-low band for the first time in 2015. They are now nearly the same as year-ago inventories of 11.5 million barrels.

Inventories have stayed low despite the fact that gasoline production has stayed at or near the top of the 5-year high-low band for weeks and has been in an upward trend throughout 2015. During the week of April 17, inventories stood at 6.8 million barrels, almost unchanged from 2014 production of 6.7 million barrels.

Figure 8: Diesel Production and Inventories



Source: Petroleum Industry Information Reporting Act data.

Like gasoline, diesel inventories remain near the bottom of the five-year high-low band. Since March, inventories have declined to 3.1 million barrels, having fallen as low as 2.6 million barrels per week. Year-ago inventories were much higher at 3.7 million barrels.

Again like gasoline, the decline in diesel inventories occurred despite production near the top of the five-year high-low band. Diesel production rose to 2.8 million barrels during the week of April 17, having risen from less than 2 million barrels in early February. Year-ago production was also 2.8 million barrels.